

REPEATER JOURNAL

CAROLINAS - VIRGINIA REPEATER ASSN. INC

Organized 1971

MAY, 1977

VOLUME 6, NO. 2

220-FM

Inside:

North Carolina

South Carolina

Virginia

**UPDATED
REPEATER
LISTINGS**



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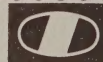
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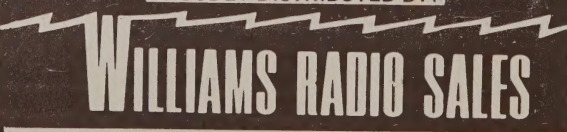
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REPEATER JOURNAL

CAROLINAS - VIRGINIA REPEATER ASSN. INC

Vol. 6 No. 2

Organized 1971

May 1977

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COVER PHOTO

Many of you have inquired as to the scene on the Cover of the February issue. Well, this shot was taken during "Field Day" of the Greensboro Radio Club. You may have noticed the large beam array to the left of the automobile. The location is the top of Sauratan Mountain north of Winston-Salem. Look carefully and you will see Pilot Mountain far off in the background.

This issue features a shot of a typical Hamshack "highlighting" the "new" addition to many layouts in the Carolinas and Virginia. . . a 220 mhz transceiver.

We welcome your input to the "Journal". Send us your article for review. The pay is very low. . . like nothing, but we would like to hear from you.

Bill Parris, K4GHR, Editor

"THE REPEATER JOURNAL" is published four times each year in the months of February, May, August, and November, for members of CVRA. Permission is granted for quoting from the "THE REPEATER JOURNAL" provided credit line is given. The CVRA will swap newsletters with other Repeater Councils on request. "THE REPEATER JOURNAL" has a circulation of 1500 copies and is entered as Second Class Mail at the Post Office in Burlington, NC 27215.

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TWO METER FREQUENCY SITUATION IN CVRA TERRITORY

. by Charles Durst, WA4WTX
N. C. Director, CVRA

Two meter operation began many years ago when the first police or taxi radio was converted for operation in the 146 Mhz. band. Direct, noise-free local communications was to be realized from this mode. Then repeaters were built to extend the coverage. At first all repeaters were on 146.34 - 146.76 and simplex activity was on 146.94. This worked fine when there was only a few repeaters.

As the number of repeaters increased, it became obvious that one frequency pair would not be enough. Repeaters were coming up on 34-94 (formerly 34-76), 28-88, 22-82, and 16-76. Obviously some coordination of frequencies would be necessary for orderly repeater growth in the two meter band. In 1971 the North Carolina FM Repeater Association was formed with the twelve repeaters in North Carolina represented. Frequency coordination and dissemination of information were the primary functions of NCFMRA.

As repeater activity spread into South Carolina and Virginia, NCFMRA expanded and became the Carolinas-Virginia Repeater Association. Today CVRA has almost 100 repeater members and over 1000 associate members.

As new repeaters have been built and new equipment has become available, the state-of-the-art has certainly advanced. In the beginning, one and two frequency radios were adequate. Now frequency synthesizers are essential to work all the repeaters scattered over 27 repeater pairs plus several simplex frequencies without spending a fortune on crystals.

There are so many repeaters on in some areas now that there are no pairs left on the standard 30 kHz. channels. To accomodate all who wish to put repeaters on the air, a plan was formulated to space repeaters 15 kHz. apart, thus doubling the number of available repeater pairs.

There was much discussion over the country concerning the implementation of these 15 kHz., split-split, or tertiary channels. Some favored using them "right-side-up" just like the 30 kHz. channels on either side. Others favored an "upside-down" arrangement which would have been "high in" in the 146 MHz. range and "low in" in the 147 range. After all was said and done, the "right-side-up" plan was recommended. Most areas followed except California and Texas. CVRA followed its neighbors in the Washington area by going "right-side-up".

Today several repeaters are operational on 15 kHz. channels with several more planned. Already there have been some problems and expected problems. Whatever the problems are, we must work them out by proper operation of equipment and upgrading to state-of-the-art techniques. Until more two meter frequencies are made available for repeaters, we must use the 15 kHz. channels for repeater growth.

Guidelines have been established by CVRA for implementation and operation on 15 kHz. channels. These are outlined as follows:

(cont. page 27)

NORTH CAROLINA

Albermarle The Stanley County Repeater Association now has its machine on 146.385/146.985, in regular service from its site Northeast of Albemarle near the community of Palestine. WR4BBX is an open repeater and has good mobile coverage extending 35+ miles. The antenna currently consists of a single Ringo Ranger and a Wacom Duplexer. The Ringo will soon be replaced by four phased 4 element beams. HAAT is 305 ft. Officers of the Stanley County Repeater Association are: Pres. Glenn Pierson, WA4LBT; Vice Pres. Jeff Cloud, W4USH; and Sec./Treas.: Virgil Porter, K4JJA.

Greensboro The CVRA wishes to extend its sympathy to the friends and relatives of Bob Franklin, W4FRH, who passed away on April 24. Bob was one of the owners of the Greensboro, 16/76 machine, WR4AOD.

Greensboro WR4ANP, 147.72/147.12, now is equipped with an autopatch capable of dialing 2222, the emergency communications dispatcher for the Guilford County Fire and Emergency Service. No other numbers may be dialed.

Greensboro The Carolinas-Virginia Repeater Association Information Net was begun March 2, on the 87/27, WR4BBE, repeater in Greensboro at 8:30 pm. The net is designed as a place for Amateurs to ask questions and assist in passing information to Amateurs in the Guilford County area. The Net was created by Wayne Williams, K4MOB, in cooperation with the Greensboro Amateur Radio Society, owner of the repeater. The net is held each Wednesday night. The Net Control fields questions from check-ins about 2 meter operations, 220 mhz operations, repeaters, and repeater frequencies. Several sessions have been devoted to setting audio and deviation levels on the air, and frequency tuning for amateurs who need the service. Check-in stations average 20-30 each week.

Greensboro WR4BBE, 147.87/147.27, is now located in its permanent location atop Guilford College in the western part of the city, after moving from atop the Guilford building in downtown Greensboro. The machine with its new call, WR4BBE, is now equipped with Autopatch facilities. Coverage is good throughout Guilford County, the western part of Alamance and eastern Forsyth Counties.

Graham The 220mhz WR4AYO repeater is on the air on a part time basis operating on 223.22/224.82. Ray, K4KIP, said his new 4-pole dipole array is installed and he is presently waiting delivery of a new Phelps-Dodge duplexer.

Colfax The new 223.28/224.88 repeater, WR4BBJ, in Colfax ran into desense problems and shut down temporarily after a start up in February. Wayne, K4MOB, reports his 4-pole dipole antenna array has been installed and he is now waiting for the new Phelps-Dodge duplexer. The duplexer is expected shortly, and the new on the air date is set for early May.

Winston-Salem The second Winston-Salem repeater is now operating at its temporary location in western Forsyth County. Ray, K4QDM, reports their call has not yet arrived and thus is using the temporary call of WR4AJD. The machine is operating on 147.915/147.315, gives good coverage across Forsyth into Guilford to the east and surrounding counties.

NORTH CAROLINA

Colfax Wayne Williams, K4MOB, at press time was finishing his 4th order to Clegg for 220mhz transceivers. Wayne tells us that he will probably get more orders up in the near future. If anyone is interested in getting on 220, they might want to contact Wayne for a future order.

Boone WR4ATQ, 147.96/147.36, which has been off the air for several months is now back on the air with a super signal. How about giving it a try?

Reidsville The 28/85 Reidsville repeater now has its new Autopatch facilities operational. WR4ADE continues to provide good coverage throughout Rockingham and surrounding counties.

Eden The 84/24 repeater in Eden, WR4AZX, is now on the air at a temporary site at the QTH of Kerry, WA4ACP. The RCA Fleetline is feeding 35 watts into a split antenna system and is providing good mobile coverage.

Gastonia The Gaston County Amateur Radio Society is a new formed club in the Gastonia area. The club is sponsoring the 72/12 repeater, WR4ATP, which was erected by Bill, W4REW, atop Spencer Mountain at the WBTV channel 3 television site. Officers are – Pres.: Jack, W4AOJ; Sec.: Al, WA4PNO; and Treas.: George, WB4KDF. The machine has a good 40 mile coverage in all directions with a null toward Greensboro.

Greensboro Congratulations to W4AIT, the first North Carolina Amateur to work all 50 states via OSCAR 6 & 7.

Fayetteville The Cape Fear Amateur Radio Society two meter net continues to meet each evening on WR4ANN, K4NUG, Net Manager, reports:

February –649 Check-ins, 28 Formal Tfc., 28 Visiting Stns., Time 11.0 hrs

March –796 Check-ins, 25 Formal Tfc., 32 Visiting Stns., Time 12.2 hrs

Fayetteville The Cape Fear Amateur Radio Society presents its first annual Fayetteville Hamfest, August 14, 1977, at Roger's I-95 Airport, 7 miles south off US 301. Contact CFARS at Box M-618, Methodist College, Fayetteville, NC 28301, for more details.

Manteo WR4AKB, 146.34/146.94, is now at a new site atop the Ramada Inn, at 130 ft. Initial checks indicate significant improvement in coverage.

Lexington The Healing Springs Mountain VHF Society, operator of WR4ABX, 146.31/146.91, in Lexington recently sent in membership to CVRA for all of its 24 members. This is the second year in a row for the club to provide this service to its members. How about your repeater club? Why not include a membership in CVRA for your members?

Jacksonville The Onslow Amateur Radio Club held an "ARRL Affiliation Party" on Saturday evening, March 19, at Luigi's Restaurant in Jacksonville. A good time was had by all.

NORTH CAROLINA

Charlotte WR4ALO, owned and operated by Francis Nakamura, WB4ETF, will soon be operating on 450 mhz as well as two meters. A 400 watt ERP machine is presently under construction which will be on 449.85/444.85 mhz. The new repeater will be linked to the 146.46/147.06 machine initially. Both of these repeaters are located on the WSOC-TV, Channel 9, tower on the north side of Charlotte.

Raleigh WR4ACF, 146.04/146.64, operated by the Raleigh Amateur Radio Society is now equipped with an Autopatch. Standard access and disconnect is provided.

Charlotte WR4AWQ, 147.99/147.39, is now in regular service from a temporary site. Future plans call for extending its range to provide good mobile coverage for Mecklenburg and Union Counties. The repeater is owned by Jack Davis, WB4KOH.

Lake Toxaway WR4AGH, 147.81/147.21, is now providing coverage from Charlotte to Greenville. The Motorola Sensicon equipment feeds a 4-pole array at 1500' HAAT.

Fayetteville On Saturday, March 12, 11 members of the Cape Fear ARS helped the March of Dimes with the 20 mile Walk-A-Thon by providing communications. There were 1653 Walkers and the operation was both fun and successful.

Fayetteville Want to get your CW back into shape? The Cape Fear ARS has just the deal for you. The Cape Fear Training Net (CFTN) meets on Monday, Wednesday and Friday evenings on 3710 khz at 8:00 PM local time. The net is geared to help everyone bring up their code speed. You do not have to be a member of the Cape Fear ARS to participate. . . this is open to all. WB4WOR is the net manager.

Beulaville. The former Beulaville repeater is being dismantled and plans are to move it to Burgaw, NC (25 miles north of Wilmington) and establish it on 34/94 if there is no conflict with the Jacksonville, NC machine, WR4ATW. It will be maintained by J. B. Shepard, W4YBA.

Bet you Didn't Know you had an Ecology Problem

Another regulatory measure with far-reaching restrictive potential not only for Amateurs but for commercial and broadcast interests as well is rumored to be brewing in Washington as a result of recent studies by the EPA. If enacted, the new regulation would restrict the height of all self-supporting antenna towers of less than 2.5 sq. ft. base cross section (which includes a large majority of amateur type towers) to a height of NO MORE THAN 34 FEET. (Heights for guyed towers with larger bases would also be restricted in accordance with a complex formula which need not be printed here.) The report on the EPA studies cites the following points: 1) most amateur towers (Yes it started there, and the hams will get the blame!)

average 60 or more feet in height, are usually free-standing, and usually have beams mounted on top; 2) wind effects on towers of this type cause random shear and bending moments which result in the familiar "shaking" of the towers which, until now, no one has been overly concerned about; but, 3) it often happens, especially in the late spring and throughout the summer months in the temperate zones of the world, that this shaking effect is transmitted to the surrounding earth, disturbs all the EARTHWORMS in the vicinity, causes them to come to the surface (often during the hottest part of the day), and this inordinate exposure of the earthworms to the direct rays of the sun causes them to expire prematurely from sunstroke, thus upsetting the ecology.

— Tnx "Action Mini-Mag" Jackson, Mich.

INTRODUCING....

THE MICROWAVE MODULES TRIO!

The MMT144/28 pictured below is representative of our current range of professional quality all mode solid state linear Transverters which now comprises:-

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TX - Required input: ½ watt. Power output: 10 watts continuous
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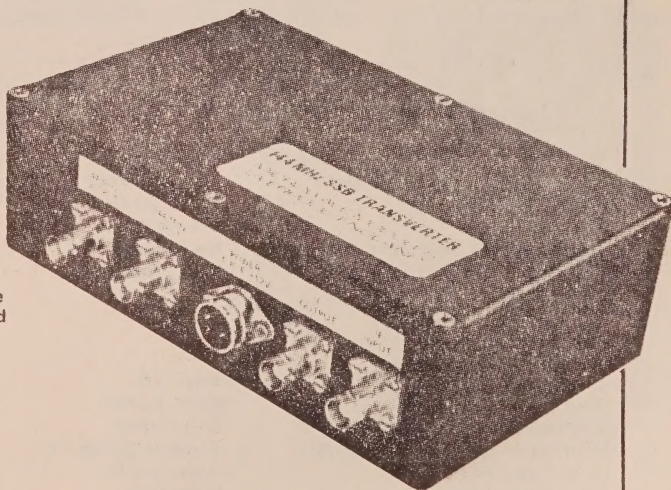
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VHF Net Register (Local Times Indicated)

Two Meters — FM

Anderson SC	37/97	WR4AIO	Anderson Radio Club Net	Daily	2000
Asheville NC	16/76	WR4AEV	Western North Carolina Tfc Net	Tue	2030
Benson NC	87/27	WR4ARL	Johnson ARS Net	Daily	1930
Burlington NC	07/67	WR4AKY	Alamance County AREC Net	MWF	2100
Catawba County NC	146.82		Catawba County RACES Net	Mon	1900
Charlotte NC	34/94	WR4AEU	Metrolina 2 Meter Emer. Net	Daily	2100
Fayetteville NC	31/91	WR4ANN	Cape Fear ARS Net	Daily	1900
Florence SC	37/97	WR4AGM	Florence 2 Meter Net	Mon	2000
Greensboro NC	72/12	WR4ANP	Guilford County Emer. Net	Thu	2100
Greensboro NC	87/27	WR4BBE	CVRA Information Net	Wed	2030
Greenville SC	01/61	WR4ADG	Blue Ridge ARS Net	Daily	2100
Greenwood SC	75/15	WR4AEU	Abbeville-Greenwood Emer. Net	Tue.	2200
Grifton NC	16/76	WR4ABP	ENC Emergency Net	Thu	2000
Hampton Va	34/94	WR4AFT	Hampton Roads Emer. Net	Wed	2000
Laurinburg NC	07/67	WR4AOX	Sand Hills Emergency Net	Daily	1930
Lynchburg Va	01/61	WR4AXO	Lynchburg Two Meter FM Net	Tue	1900
Myrtle Beach SC	01/61	WR4AXC	Grand Strand 2 Meter Net	Wed	2100
Raleigh NC	04/64	WR4ACF	RARS Net	MTThF	2000
Richmond Va	28/88	WR4ACW	Amateur Traffic & Trouble Net	MTWTh	2030
Salisbury NC	13/73	WR4AAA	Central North Carolina Tfc Net	Daily	2200
Sumter SC	04/64	WR4AOI	Sumter Repeater Assn. 2 Meter Net	Mon	2000
White Hall SC	31/91	WR4AQL	Coastal ARA 2 Meter Net	Thu	2100
Winchester Va	22/82	WR4AGT	Shenandoah Valley Service Net	Daily	1915
Winston-Salem NC	04/64	WR4ARD	Forsyth County AREC/RACES Net	Wed	2100

Two Meters — SSB / CW / AM

Tidewater Sideband Net (2 Meters)	Norfolk Va	145.025	Tue	2100
North Carolina 2 meter SSB Net	Greensboro NC	145.025	Tue	2000
Midwestern SSB Net	Cincinnati Ohio	145.020	STTh	2100
S. L. O. T. Net	Greenville SC	145.025	MWF	2215
Hampton Roads Emergency Net (AM)	Norfolk Va	145.800	Mon	2000
Mid Atlantic 2 Meter Net	Washington DC	145.100	Wed	2100

Six Meters

Interstate Net (SSB)	Atlanta Ga	50.110	Tue	2100
Dixie Net (SSB)	Charlotte NC	50.110	Wed	2100
Charlotte Hornet Net (AM)	Charlotte NC	50.400	Sun	2100
North Carolina 6 Meter Net (SSB)	Glendale Springs NC	50.120	Sun	0900
Central Virginia Net (AM)	Richmond Va	50.250	Daily	1900
Tidewater SSB Net	Norfolk Va	50.150	Tue	2000

Nicholas Murray Butler said: "I divide the world into three classes — The few who make things happen, the many who watch things happen, and the overwhelming majority who have no notion of what happens".

LETS HAVE ALL REPEATER USERS AS ASSOCIATE MEMBERS !!

One of the prime objectives of the CVRA is to educate users of repeaters, so maximum enjoyment can be had by all. We all here newcomers on the local repeater asking questions as to procedure, where the repeater is located, and advice on technical matters. The CVRA can be very effective in filling this need. So tell the "Newcomer" about CVRA, and see that he joins.

Associate Membership Application
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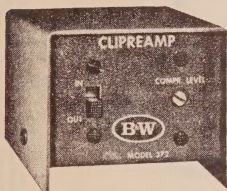
Specifications:

Input Impedance 100,000 ohms
Input Levels 5 millivolts to 20 millivolts
Voltage Gain 10 db
Output Level 60 millivolts
Output Impedance 50,000 ohms
Power 9 volt Transistor battery, Burgess 2U6 or equal.

Size

Shipping Wt. 7 oz.

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Specifications:

Inputs from:

Line 600 ohms
Receiver 4 ohms
Microphone High Imp. (50,000 ohms) crystal or dynamic.
4 ohms

Tape Recorder

Outputs to:

Transmitter 50,000 ohms

Receiver Speaker 4 ohms

Tape Recorder 0.5 megohm

Size

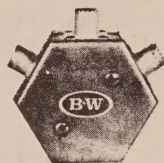
Shipping Weight 6 1/2" X 7 1/2" X 3"

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Economical and reliable. Can be operated from VOX circuit for completely automatic operation or from PTT or manual T/R switch. Receiver input is automatically grounded when the relay is in the transmit position. Wide AC operating voltage and low operating current.

SPECIFICATIONS:

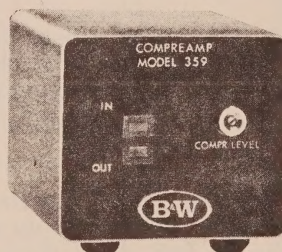
Power Rating 1000 watts CW (2000 watts SSB)
VSWR Less than 1.15:1 DC to 150mhz
Power Requirement 0.015 Ampere 48 to 130 volts AC
Connector UHF Type SO-239
Dimension 3 1/2" X 1 1/2"
Shipping Wt. 1 lb.



BARKER & WILLIAMSON, INC.

COMPREAMP

Model 359 — \$37.50



Increase your Transmitter's effective speech power up to four times. Or use it with your tape recorder or public address system for improved performance. This two-stage transistorized Audio Preamplifier/Limiter can be used with all types of transmitters. Powered by long-lasting dry cell battery— no external power needed. Installs without any wiring changes in your transmitter. Just connect the Compreamp between your microphone (50,000-ohm dynamic or high-impedance ceramic) and your transmitter's microphone input connector. Front-panel rocker switch lets you bypass the Compreamp when you want to. Compression level is adjustable, too.

Specifications:

Input Impedance 100,000 ohms
Input level 5 millivolts to 20 millivolts
Voltage gain 10 db
Output level 60 millivolts
Output Impedance 50,000 ohms
Power 9-volt transistor battery, Burgess 2U6 or equal

Size

Shipping Wt. 2 3/4" X 3" X 4 1/2"

Connectors 6 1/2 oz.

Terminal strip

CVRA Repeater Memberships continue to come in at a steady pace. Current total repeater memberships now stand at 98, highest ever in CVRA history. Membership No. 97 went to Laurinburg, NC, WR4AOX and No. 98 to a new machine proposed for Spartanburg, SC on 6/9/09 to be sponsored by the Spartanburg ARC.

It is important that we get all repeater groups in our three state area to become members of the Association. It is not possible for us to not make mistakes on frequency recommendations, but through the CVRA it is hoped that the parties concerned will be able to negotiate out of any unhealthy situations. It is also important that all repeater users become CVRA members. We must continue to provide educational material for the newcomer on VHF/UHF so he can learn the correct operating Procedures and become familiar with repeater operation.

If you plan to put a repeater on the air, or if you know of someone who is considering putting a repeater on, contact the state Director listed on the first page of the "Journal". The purpose of the CVRA is to permit maximum enjoyment of all repeaters by proper frequency coordination.

INTERFERENCE PROBLEMS

It is common to hear someone on the repeater commenting on how strong the "Podunk" repeater (which is on the same frequency that your favorite machine is on) is being heard tonight. Well, chances are, you are not hearing the "Podunk" repeater, you are hearing someone who is working through the Podunk machine and he is "keying - up" your local repeater too.

It is becoming quite frequent now, that stations with antennas and running a little "amplifier", are keying - up more than one repeater at a time. Just because you have a beam at 50 feet, don't think that you can only be heard in the direction that you have it pointed. Could be that you need to have another small beam mounted on a broom handle outside your window to work a nearby repeater and thereby keep from keying up another one. If you key up more than one repeater, the fault is yours, not the clubs or persons who own the two repeaters. You can prevent the interference by proper antenna placement (and that may be somewhere other than on the top of your tower) and by proper power restrictions.

It is difficult to restrain yourself from wanting to talk through a repeater that you can hear, even though you know you may be interfering with another machine. But just because you can hear it, and have the capability to access it, that does not give you the privilege to use it if it means that you will cause interference in the process.

With all the people who want to put up a repeater, frequencies are becoming scarce. Machines are now being placed on 15 kHz spacing rather than the former 60 kHz spacing. Physical distances between repeaters occupying the same frequency are diminishing. All this means that the users are going to have to discipline themselves if we are to maintain any order. Only you can make this happen let's all start now.

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123 GRANDIN CT. DANVILLE, VA. 24541
TELEPHONE (804) 793-8302

(PHONE AFTER 5:00 P.M. AND WEEKENDS, PLEASE)

NEWS FROM CVRA BORDER AREAS

CVRA invites all repeaters that cover any part of the states of North Carolina, Virginia, or South Carolina, to become a member of the Association. The repeater does not have to be actually located in one of these three states. One repeater, WR4AHB, owned by Ray Crawford in Toccoa, Ga., has been a member of CVRA for two years now. This machine gives good coverage to the Northeast Georgia area and the western counties in South Carolina. The machine is on 24 hrs. daily. The Motorola tube type equipment feeds through a duplexer to a single 6 db. array at 200 ft. HAAT.

There is a lot of two meter activity in Savannah, Ga. area now. The Amateur Radio Club of Savannah, who currently operates 28/88 machine, has a machine on 37/97 in the testing stage. The 28/88 repeater consists of Dycom Echo 1 machine and is located on an apartment building in the greater downtown area. The 37/97 repeater will be located on TV Channel 22 tower at the 400 ft. level. It should provide a very wide coverage of the costal area.

Also in Savannah, the Costal Amateur Radio Club is installing a machine on 10/70. This repeater will be located at the 600 ft. level on TV channel 3 tower. Operation should begin in May. The 10/70 repeater will be equipped with an auto-patch.

The Amateur Radio Club of Savannah meets the 1st. and 3rd. Tuesday of each Month. The meeting on the 1st Tuesday is at Oglethorpe Mall, and the meeting on the 3rd Tuesday is announced prior to the meeting.

A new repeater is being planned for the Augusta, Ga. area to be operated on 147.72/147.12. No additional details are available.

There are other two meter repeaters in Augusta on 34/94 and 93/33. Of course, in North Augusta, SC, WR4ABB, 13/73, continues to give good service as usual.

WR4ADO, in Kingsport, Tn. is back on 16/76, after a short operating time on 145/745. With both WR4ADO and WR4AEV at Mt. Pisgah on 76, there is a lot of multiple "Key - ups" in the mountain area.

For those members who may be traveling in the area around the border junctions of Virginia, West Virginia, and Kentucky, you will want to listen for WR4AWR, 147.60/147.00, located in Ashcamp, Ky., just over the Virginia line. The machine has good mobile coverage into the western Virginia area. Owners are WB4WAU and K4BGQ.

News Needed From Your Area

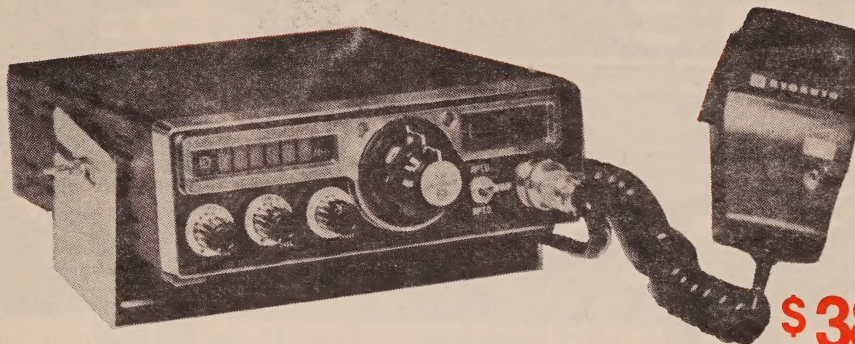
News about your repeater, club, net, etc., cannot get into the "Journal" unless you send the information to the Editor. There is no intention to concentrate the "News" in any area within the three states of CVRA. But if you want to see the events of your area published, you must get the info to your State Director, or to the Editor. All addresses are in the front of the newsletter.

Also, we would like to start printing some pictures of the various repeaters, antennas, locations, etc. If you have some good black and white pictures of your group, its repeater, etc., which you think would be of interest to the members of CVRA, please send them to the Editor.

Reports have been received from some western states that truckers are buying Sears, and other, two meter radios and moving from Channel 19 to 146.58.

tnx. Ham Radio Magazine, Greenville, N.H.

FM144-10SXR-II



\$389⁰⁰

**ALL SOLID STATE-PLL DIGITAL SYNTHESIZED — NO CRYSTALS TO BUY
5KHz STEPS — 144-148 MHz-LED DIGITAL READOUT — 1000 CHANNELS.**

- Unbelievable size — $2\frac{1}{8} \times 6\frac{1}{2} \times 7\frac{1}{2}$
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- True FM — not phase modulation
- Re-programmable priority chan.
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- Better than .25uv sensitivity
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- PLL DC output fed to varactors
- Independently regulated supplies



ACCESSORIES FOR KDK 144

FMPS-4R	Regulated AC/PS	\$49
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FMT-P-2	Touch Tone Pad with 10 Number Programmable Memory	\$99
FMMC-1	Microphone with built-in Touch Tone Pad	\$59
FMTD-1	Private call decoder with and Programed by any Touch Tone Pad	\$129
SC-12A	Audible Tone Encoder Decoder	\$119
FMSC-1	Scanner-Random, Any Range	\$169
FMSC-2	Scanner-Programmable, 14 Channels	\$99
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FMOF-1	Offset Option Kit-2 Extra Positions, Crystals Required	\$19
FMOF-2	$\pm$ 1Mhz Offset Option Kit (No Crystals To Buy)	\$19
FMTE-1	Sub Audible Tone (100hz— adjustable 67-203 Hz)	\$29
FMAT-1	$\frac{1}{2}$ Wave Portable Antenna for Hotel Motel or Apartment	\$7.95
	Extra DC Cord and Plug	\$3.50
	ACC Socket 5 Pin Din Plug	\$1.50
	Owners Manual	\$5.00
	Service Manual	\$2.00
	Mounting Bracket (Extra)	\$6.00

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- Try the FM144 with built in scanner
that works on receive and transmit
with the flick of the mike switch. No
holes - no modifications - internally
installed."

Add the scanner to your present
FM144 for just \$ 98.00

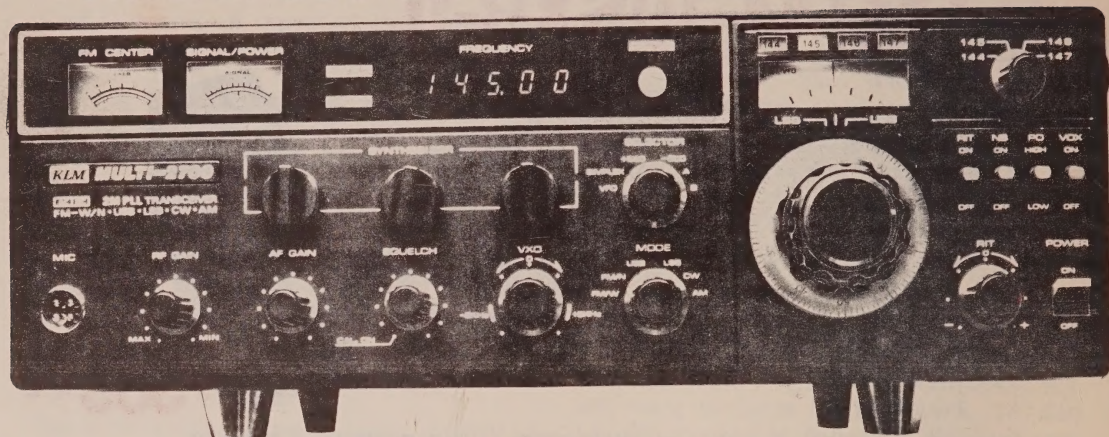
(add shipping; NC residents add 4% Sales Tax).

Hrs. 9:30 to 6:00 Mon. — Fri.
9:00 to 1:00 Sat.

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Triad Electronic Communications Company

4349 Kernersville Road
Kernersville, North Carolina 27284
—(919) 784 - 8833—

VHF transceivers . . .



KLM, Multi 2700 All mode

Present state-of-the-VHF transceiver art is so advanced that the discerning VHF enthusiast has available to him virtually any desired operating feature. Up to this time, no individual transceiver has incorporated every in-demand feature. But this deficiency has changed overnight with the advent of KLM's Multi 2700, without doubt the most complete, full-featured VHF transceiver ever offered. Verify this broad statement. **Compare!**

- 143-149 MHz, continuous coverage.
- Frequency synthesized (PLL) 600 channels, 10 kHz steps.
- LED readout on synthesizer.
- Standard ± 600 kHz splits plus...
- Two oddball split choices.
- OSCAR 10 meter receiver Synchronized with 2 meter OSCAR transmission.
- Built-in VFO.
- 100 kHz crystal calibrator.
- Voice operated relay (VOX)
- Audio speech compression.
- All modes: WBFM, NBFM, AM, SSB w/USB and LSB, CW.
- 8 pole SSB filter plus two FM filters
- 10 watts min. output power.
- Hi - Lo power provision.
- Noise blanker.
- VXO, ± 7 kHz.
- RIT, ± 5 kHz.
- AC/DC power supply.
- Interior space and terminals for subsequent addition of 50 MHz or 432 MHz converters.
- Top access port for VOX, speech compression controls.
- Power out/"S" meter.
- FM center/ deviation meter.
- Precision VFO dial w/1 kHz readout.
- Simplex/Duplex.
- "On the air" and "Standby" indicators.
- OSCAR switchover.
- Carrying handle.

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9:00 to 1:00 Sat.

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Several newcomers to the world of amateur radio have been asked for an article on how to convert the ever - so - popular base - loaded CB mobile antenna for use on two meter FM. Guess these fellows do not have much use for the old CB whip anymore. Heck, I'm happy to have them join our ranks as numbers and users carry "Clout" and that we will need when the 1979 WARC rolls around. Since this conversion has already been made by others and is detailed in the ARRL FM and REPEATER HANDBOOK, I will refer you readers to the Handbook for explicit details and some nice pictures.

The antenna used in the conversion is a Radio Shack Model 21 - 908 which consists of a trunk lip mount, base loading coil, and a 39 inch stainless steel whip. The 39 inch whip lends itself nicely to making a $5/8$ wavelength vertical for 2 meters. Other antennas on the CB scene are made similarly to the 21 - 908 and can be used just as nicely.

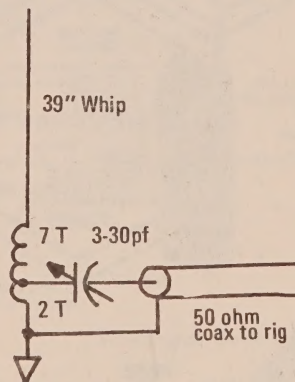
In a nut shell we must remove the original loading coil, wind a new coil, and mount a 3 - 30pf. trimmer capacitor (Arco 461 or equivalent) in the bottom housing. By adjusting the feed tap on the loading coil and the trimmer capacitor, a nice match between the 50 ohm feedline and the whip can be achieved.

To get to the old coil the weather proof cover over the coil must be removed. Remove the base housing and clamp the whip in the vice. Then insert a knife blade or sharp chisel between the edge of the whip base and the cover. By gently tapping the knife or chisel and working your way around the circumference of the cover, you can loosen the cover and then remove it.

The next step is to remove the turns of wire that make the old loading coil. Then wind a new coil on the phenolic form consisting of 9 equally spaced turns of No. 12AWG wire. The point for the tap is two turns up from the base (ground) end of the coil. Install a small lug -type terminal strip in the base housing and mount the trimmer capacitor to it. An electrical schematic of the antenna is shown in Fig. 1. A hole large enough to admit a non-metallic tuning tool is drilled in the base so that the trimmer can be adjusted from the outside.

All that is left now is to reassemble the antenna and mount it on the car. Using an SWR bridge that is accurate at 2 meters, adjust the trimmer capacitor for minimum reflected power (lowest SWR). If the mounting location of the antenna is changed, it will be necessary to readjust the trimmer for the best match. It would be wise to cover the adjusting hole with a piece of electrical tape to keep out water.

FIG. 1



JUST ASK ANY HAM ABOUT A Wilson RADIO . . .



WE-800

2 METER PORTABLE
SYNTHESIZED RADIO

\$399.00 LIST

... we're known by the thousands who use us!!!

SPECS. 1405SM

- 6 Channel Operation
- Individual Trimmers on all TX/RX Crystals
- All Crystals Plug In
- 12 KHz Ceramic Filter
- 10.7 and 455 KHz IF
- .3 Microvolt Sensitivity for 20 dB Quieting
- Weight: 1 lb. 4 oz. less Battery
- Battery Indicator
- Size: 8 7/8 x 1 3/4 x 2 7/8
- Switchable 1 & 5 Watts Minimum Output @ 12 VDC
- Current Drain: RX 25 MA TX 400 MA (1w) 900 MA (5W)
- Microswitch Speaker Mic
- Unbreakable Lexan Case
- Furnished with Flex Antenna and Simplex Xial Frequency installed.

ACCESSORIES:

- Battery Chargers
- Touch Pads
- Tone Options
- Speaker Mics
- Leather Cases
- Mobile Amplifier and Battery Charger



1402SM
HAND HELD
2.5 WATT
TRANSCIVER
144-148 MHz
\$192.95 LIST

SPECS. 2202SM

FREQUENCY RANGE 220-225 MHz

- 6 Channel Operation
- Individual Trimmers on all TX/RX Crystals
- All Crystals Plug In
- 12 KHz Ceramic Filter
- 10.7 and 455 KHz IF
- .3 Microvolt Sensitivity for 20 dB Quieting
- Weight: 1 lb. 4 oz. less Battery
- Battery Indicator
- Size: 8 7/8 x 1 3/4 x 2 7/8
- Switchable 1 & 2.5 Watts Output @ 12 VDC
- Current Drain: RX 25 MA, TX 400 MA
- Microswitch Speaker Mic
- Unbreakable Lexan Case
- Furnished with Flex Antenna and Simplex Xial Frequency installed.
- Use the same accessories as 1405.

\$259.95 2202SM

1405SM
5 WATT
TRANSCIVER
144-148 MHz
\$259.95

Wilson 2 meter Hand-Held radios . . . The dependable ones . . . proven performance for the discriminating Ham who insists on quality and value.

Two models are available: the 2.5 watt model 1402SM, and the switchable 1 watt or 5 watt model 1405SM . . . options include Touch-Tone Pad, Battery Charger, Battery Packs, Speaker Mike, Leather Case, and Tone Options.

Join the thousands of amateurs now using Wilson . . . the radio that goes where you do.

1402 SPECS

- 6 Channel Operation
- Individual Trimmers on all TX/RX Crystals
- All Crystals Plug In
- 12 KHz Ceramic Filter
- 10.7 IF and 455 KHz IF
- .3 Microvolt Sensitivity for 20 dB Quieting
- Weight: 1 lb. 4 oz. less Battery
- S-Meter/Battery Indicator
- Size: 8 7/8 x 1 7/8 x 2 7/8
- 2.5 Watts Minimum Output @ 12 VDC
- Current Drain RX 25 MA TX 500 MA
- Microswitch Speaker Mic
- High Impact Plastic Case

MORE ABOUT THE WE-800:

Wilson's New Portable 800 Channel 2 Meter Synthesized Radio that can go anywhere with you • Switchable 1 and 12 watt output • 1 watt output with internal Ni-cad battery pack (takes regular 10 "AA" Ni-cads) • Low current drain CMOS synthesizer: RX45 MA, TX 350 MA at 1 watt • 12 watt output mobile • Covers frequency range 144-148 MHz in 5 kHz steps, 600 kHz off-set up or down • Two positions available for other than 600 kHz off-set • Five pre-set channels • On-off switch control for meter light in rear for power saving use • Size 8-1/4" x 6-3/4" x 1-7/8" • Weight 1 lb. 5 oz.

ALL WILSON HAND-HELD RADIOS FEATURE:

- Performance
- Dependability
- Rugged Construction
- Versatility

WILSON ALSO
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LINES OF
ANTENNAS,
CRANK-UP
TOWERS,
AND
ROTORS . . .

4502SM SPECS.

- 6 Channel Operation
- Individual Trimmers on all TX/RX Crystals
- All Crystals Plug In
- 12 KHz Ceramic Filter
- 21 & 455 KHz IF
- .3 Microvolt Sensitivity for 20 dB Quieting
- Weight: 1 lb. 4 oz. less Battery
- Battery Indicator
- Size: 8 7/8 x 1 3/4 x 2 7/8
- Switchable 1 & 1.8 Watts Output @ 12 VDC
- Current Drain: RX 25 MA, TX 300 MA
- Microswitch Speaker Mic
- Unbreakable Lexan Case
- Furnished with Flex Antenna and Simplex Xial Frequency installed.
- Use same accessories as 1405.

\$324.95

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North Carolina

South Carolina

Virginia

01/61	Statesville	Greenville, Myrtle Bch.	Lynchburg, Abingdon
025/625	Kannapolis	—	New Market
04/64	Asheville, Raleigh	Sumter	Richmond
055/655	Winston-Salem	—	—
07/67	Kannapolis	—	Alexandria
	Burlington, Forest City	Columbia	Barren Springs
	Laurinburg	—	—
085/685	—	—	McLean
10/70	Greenville (Tn), Marion	Lancaster, Charleston	Danville, Richmond
	—	Savannah (Ga)	Portsmouth
115/715	Fayetteville	—	—
13/73	Salisbury, Wilmington	No. Augusta	Hampton, Roanoke
145/745	Kingsport (Tn)	—	—
16/76	Grifton, Greensboro, Asheville	Charleston, Columbia	Bluefield W Va., Charlottesville
175/775	—	—	—
19/79	High Point	Toccoa (Ga) Chester	Chesapeake, Fairfax,
	Johnson City (Tn)	—	Lynchburg
205/805	Gastonia	—	—
22/82	Durham, Roaring Gap	Greenville	Winchester, Arlington
	Wilmington	—	—
235/835	—	Columbia (147.255 in)	—
25/85	Hickory, Reidsville	Laurens	Afton
	Seven Springs	—	—
265/865	—	—	—
28/88	Raleigh, Shelby, Bristol (Tn)	Columbia, Savannah (Ga)	Bristol, Roanoke, Richmond
295/895	—	—	—
31/91	Fayetteville, Lexington	White Hall	Tyson's Corner, Farmville
	Murfreesboro, Asheville	—	Blacksburg
325/925	—	—	—
34/94	Aurora, Durham, Manteo	Charleston, Columbia	Hampton, Roanoke
	Charlotte, Jacksonville	Greenville, Augusta (Ga)	Richmond
355/955	—	—	—
37/97	Mt. Airy, Smithfield	Anderson, Florence	Bull Run, Virginia Beach
	Kings Mountain	Savannah (Ga)	—
385/985	Albemarle	—	Roanoke
40/00	High Point, Jacksonville	Pickens	Suffolk
60/00	Bristol (Tn)	—	—
615/015	—	—	—
43/03	Irwin	Rock Hill	Richmond, Blacksburg
63/03	Greensboro	—	—
645/045	—	—	—
46/06	Charlotte, Elizabeth Cty	—	South Boston
66/06	—	Sumter	—
475/075	—	—	—
675/075	—	—	—
69/09	Greenville	Orangeburg, Spartanburg	Galax
705/105	Marion	—	—
72/12	Greensboro, Rocky Mt	Augusta (Ga)	Warrenton, Culpepper
735/135	—	—	—
75/15	Durham, Morganton	Greenwood	Williamsburg
765/165	—	—	—
78/18	Charlotte, Sanford	—	—
795/195	—	—	—
81/21	Lake Toxaway, Greensboro	—	McLean
	Lumberton, Gastonia	—	—
825/225	Durham	—	—
84/24	Franklin, Shelby, Eden	—	Woodbridge, South Hill
	Pine Bluff	—	—
855/255	—	—	—
87/27	Greensboro, Benson	Clemson, Charleston	—
885/285	—	—	—
90/30	Burlington, Charlotte (30-90)	—	Petersburg, Berryville
915/315	Winston-Salem	—	Alexandria
93/33	Lenior, Fayetteville	Augusta (Ga)	Lexington
945/345	—	—	Danville
96/36	Roanoke Rpd, Boone	Columbia	Washington (DC)
975/375	—	—	—
99/39	Charlotte	—	Petersburg

NORTH CAROLINA

2 Meter Repeaters

Ahoskie	WR4AFB	146.31	146.91	C A
Albemarle	WR4	146.385	146.985	C
Asheville	WR4ALC	146.04	146.64	C
Asheville	WR4AEV	146.16	146.76	C
Asheville	WR4ANY	146.31	146.91	C A
Aurora	WR4ABQ	146.34	146.94	C
Benson	WR4ART	147.87	147.27	C A
Boone	WR4ATL	147.96	147.36	C
Burlington	WR4AKY	146.07	146.67	C A
Burlington	WR4AIF	147.90	147.30	C A
Charlotte	WR4AEU	146.34	146.94	C A
Charlotte	WR4AWQ	147.99	147.39	C A
Charlotte	WR4ALO	146.46	147.06	C A
Charlotte	WR4ABK	147.78	147.18	C
Charlotte	WR4AJX	147.30	147.90	C
Durham	WR4AJV	147.75	147.15	C
Durham	WR4AJY	146.34	146.94	A T
Durham	WR4AGC	146.22	146.82	C A
Durham	WR4AGC	147.825	147.225	C A
Eden	WR4AZX	147.84	147.24	C
Erwin	WR4ALY	146.43	147.03	C
Elizabeth City	WR4ADN	146.46	147.06	C A
Fayetteville	WR4ANN	146.31	146.91	C A
Fayetteville	WR4	146.115	146.715	P
Fayetteville	WR4ADK	147.93	147.33	C
Forest City	WR4AHA	146.07	146.67	C A
Franklin	WR4ALD	147.84	147.24	C
Gastonia	WR4BAD	146.205	146.805	C L
Gastonia	WR4ATP	147.72	147.12	C
Gastonia	WR4AOH	147.81	147.21	C A
Greensboro	WR4AXD	146.16	146.76	C
Greensboro	WR4ANP	147.72	147.12	C
Greensboro	WR4ANL	147.81	147.21	C
Greensboro	WR4AWZ	147.63	147.03	C A
Greensboro	WR4BBE	147.87	147.27	C A
Greenville	WR4AMB	147.69	147.09	C A
Grifton	WR4ABP	146.16	146.76	C
Hickory	WR4ACM	146.25	146.85	C
High Point	WR4AFV	146.19	146.79	C
High Point	WR4ADT	146.40	147.00	A
Jacksonville	WR4AJG	146.40	147.00	C A
Jacksonville	WR4ATW	146.34	146.94	C A
Kannapolis	WR4	146.055	146.655	U
Kings Mtn	WR4AYN	146.37	146.97	C U
Lake Toxaway	WR4AGH	147.81	147.21	C
Laurinburg	WR4AOX	146.07	146.67	C
Lenoir	WR4ARG	147.93	147.33	C
Lexington	WR4ABX	146.31	146.91	C A
Lumberton	WR4AUA	147.81	147.21	C
Manteo	WR4AKB	146.34	146.94	C
Marion	WR4BBN	147.705	147.105	C U
Morganton	WR4AQI	147.75	147.15	C
Mount Airy	WR4ACJ	146.37	146.97	C A
Pine Bluff	WR4	147.84	147.24	P
Raleigh	WR4ACF	146.04	146.64	C A
Raleigh	WR4AOE	146.28	146.88	C A
Reidsville	WR4ADE	146.25	146.85	C
Roanoke Rapids	WR4	147.96	147.36	P
Roaring Gap	WR4AGS	146.22	146.82	C
Rocky Mount	WR4ADN	147.72	147.12	C
Salisbury	WR4AAA	146.13	146.73	C A
Sanford	WR4	147.78	147.18	U
Seven Springs	WR4AEF	146.25	146.85	C A
Shelby	WR4ABF	146.28	146.88	C A
Shelby	WR4AWU	147.84	147.24	C A
Smithfield	WR4	146.37	147.97	C U
Statesville	WR4ADG	146.01	146.61	C
Wilmington	WR4AHL	146.22	146.82	C
Wilmington	WR4AVF	146.13	146.73	U
Winston-Salem	WR4ARD	146.04	146.64	C A
Winston-Salem	WR4AJD	147.915	147.315	C

50 mhz Repeaters

Asheville	WR4ALC	52.01	53.99	C O
Cary	WR4	52.35	53.35	C
Durham	WR4ASZ	52.15	53.15	C
Fayetteville	WR4ADK	52.07	53.07	C
Hickory	WR4ACM	52.78	52.525	C
Mocksville	WR4AJD	52.07	53.07	C

220 mhz Repeaters

Asheville	WR4AEV	222.34	223.94	C
Colfax	WR4BBJ	223.28	224.88	C
Durham	WR4AGC	222.34	223.94	C
Durham	WR4ASZ	222.50	224.10	C
Graham	WR4AYO	223.22	224.82	C
Lexington	WR4ABX	222.30	223.90	C P
Lexington	WR4ABX	223.30	224.90	C P
Locust	WR4BBA	222.40	224.00	C
Morganton	WR4AQI	223.22	224.82	C U
Raleigh	WR4ACF	223.04	224.64	C P
Raleigh	WR4	223.34	224.94	P
Winston-Salem	WR4	222.32	223.92	P

450 mhz Repeaters

Asheville	WR4ALE	449.90	445.90	C U
Charlotte	WR4AEI	450	PRIVATE	
Charlotte	WR4ALO	449.85	444.85	C U
Concord	WR4		PLANNED	
Durham	WR4AGC	449.10	444.10	C A
High Point	WR4ADT	447.90	442.90	
Moyock	WR4BBP	447.10	442.10	C U
Winston-Salem	WR4AOW	448.00	443.00	U

SOUTH CAROLINA

2 meter Repeaters

Anderson	WR4AIO	146.37	146.97	C A
Charleston	WR4ASP	146.16	146.76	C A
Charleston	WR4	146.10	146.70	A
Charleston	WR4	147.87	147.27	C U
Charleston	WR4AFX	146.34	146.94	C T
Chester	WR4	146.19	146.79	C U
Clemson	WR4	147.87	147.27	C U
Columbia	WR4ASE	147.96	147.36	C A
Columbia	WR4ACD	146.34	146.94	C T
Columbia	WR4ABA	146.28	146.88	
Columbia	WR4AYE	146.16	146.76	C
Columbia	WR4	147.255	146.835	
Columbia/Irmo	WR4	146.07	146.67	C U
Florence	WR4AGM	146.37	146.97	C
Greenville	WR4AHJ	146.22	146.82	C A
Greenville	WR4ADG	146.01	146.61	C
Greenville	WR4ABG	146.34	146.94	C T
Greenwood	WR4AUE	147.75	147.15	C
Lancaster	WR4ABM	146.10	146.70	C A
Laurens	WR4AZM	146.25	146.85	C
Myrtle Beach	WR4AXC	146.01	146.61	C
North Augusta	WR4ABB	146.13	146.73	C
Orangeburg	WR4AQY	147.69	147.09	C A
Pickens	WR4ADP	146.40	147.00	C
Rock Hill	WR4AJO	146.43	147.03	C
Spartanburg	WR4	147.69	147.09	C
Sumter	WR4	147.66	147.06	P
Sumter	WR4AOI	146.04	146.64	
White Hall	WR4AQL	146.31	146.91	C

SOUTH CAROLINA (cont.)

450 mhz Repeaters

Charleston	WR4ASP	449.10	444.50	C	U
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50 mhz Repeaters

Columbia	WR4	52.05	53.05		U
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Georgia Border Repeaters

Augusta		147.72	147.12		U
Augusta		146.34	146.94		
Augusta		147.93	147.33		
Savannah		146.10	146.70		U
Savannah		146.28	146.88		
Savannah		147.37	147.97		U
Toccoa	WR4AYM	52.025	52.525		
Toccoa	WR4AHB	146.19	146.79	C	

VIRGINIA

2 Meter Repeaters

Abingdon-	WR4ATJ	146.01	146.61		
Afton	WR4	146.25	146.85	P	
Alexandria	WR4ATZ	147.915	147.315		
Alexandria	WR4AXB	146.055	146.655		
Arlington	WR4AQP	146.22	146.82		
Barren Springs	WR4AFQ	146.07	146.67		
Berryville	WR4APE	147.90	147.30	C	L
Bluefield W Va	WR4AXS	146.16	146.76		
Blacksburg	WR4AXT	146.31	146.91	U	
Blacksburg	WR4	146.43	147.03	U	
Bristol	WR4AFZ	146.28	146.88		
Bull Run	WR4ADZ	146.37	146.97		T
Charlottesville	WR4ATL	146.16	146.76	C	
Chesapeake	WR4ACN	146.19	146.79	C	A
Culpepper	WR4	147.72	147.12		P
Danville	WR4BBJ	146.10	146.70		
Danville	WR4AHG	147.945	147.345		
Fairfax	WR4ADD	146.19	146.79		
Farmville	WR4ASW	146.31	146.91	C	
Galax	WR4AHR	147.69	147.09	C	
Hampton	WR4ALW	146.13	146.73	C	
Hampton	WR4AFT	146.34	146.94		T
Lexington	WR4ABU	147.93	147.33		
Lynchburg	WR4AXO	146.01	146.61	C	
Lynchburg	WR4ADY	146.19	146.79		A
McLean	WR4APC	147.81	147.21		
McLean	WR4	146.085	146.685	P	
New Market	WR4ATG	146.025	146.625	P	
Petersburg	WR4ATB	147.90	147.30	C	
Petersburg	WR4AWC	147.99	147.39		
Norfolk	WR4ANT	146.10	146.70	C	U
Richmond	WR4ADI	146.34	146.94		T
Richmond	WR4ACW	146.28	146.88	C	A
Richmond	†WR4ACW	146.43	147.03	C	
Richmond	†WR4ACW	146.10	146.70	C	R
Richmond	WR4	146.04	146.64		P

VIRGINIA (2 meter cont.)

Roanoke	WR4AMQ	146.13	146.73		U
Roanoke	WR4AFE	146.28	146.88	C	
Roanoke	WR4AFY	146.385	146.985	C	
Roanoke	WR4AHT	146.34	146.94		
South Boston	WR4	146.46	147.06		P
South Hill	WR4APF	147.84	147.24	C	
Staunton	WR4ACL	146.34	146.94	C	
Suffolk	WR4AKS	146.40	147.00	C	A
Tyson's Corner	WR4ABR	146.31	146.91		
Virginia Beach	WR4AAC	146.37	146.97	C	A
Warrenton	WR4	147.72	147.12		P
Washington DC	WR3AGX	147.96	147.36		
Williamsburg	WR4	147.75	147.15		P
Winchester	WR4AGT	146.22	146.82	C	
Woodbridge	WR4AII	147.84	147.24		

450 mhz Repeaters

Alexandria	WR4ANC	442.05	447.05		
Alexandria	WR4AAG	439.25	427.25	V	
Chesapeake	WR4ACN	449.95	444.95	C	P
Ft. Belvoir	WR4AJT	444.125	449.125		
Paris	WR4ANJ	444.80	449.80		
Richmond	WR4	444.50	449.50		P
Roanoke	WR4AHT	447.75	443.75		U
Tyson's Corner	WR4ABR	444.75	449.75		

50 mhz Repeaters

Lexington	WR4ABU	52.01	53.01		P
Norfolk	WR4ATK	53.525	52.525		U

220 mhz Repeaters

Tyson's Corner	WR4AEY	222.34	223.94		
Woodbridge	WR4AIJ	223.22	224.82		P

C	CVRA MEMBER	U	UNDER CONSTRUCTION
A	AUTOPATCH	P	PROPOSED
T	TONE ACCESS	O	OFF AIR TEMPORARILY
*	TEMPORARY CALL	V	TELEVISION
†	ALTERNATE FREQ.	R	RTTY ONLY
L	PL (CONTINUOUS TONE RQD.)		

CLUB MEETING CALENDAR

North Carolina

Asheville

Western North Carolina ARC, 1st Thur. 2000, Buncombe Health and Welfare Bldg.,
2nd Monday 1915 Grace Restaurant on Merrimon Street.

Benson

Johnson ARS 3rd Thur. 1930, at 50-210 Fire Station WR4ARL (27)

Burlington

Alamance ARC 2nd & 4th Monday 1930, at 230 E.Summit Ave.

Burlington

Alamance Repeater Asso. Inc. 4th Sat. 1900 at B & J Cafeteria WR4AKY (67)

Cary

Cary ARC 4th Thur. 1930 at White Plains Methodist Church, WR4AOE (88)

Charlotte

Mecklenburg ARS Last Tue. 1930- Red Cross Bldg on Park Rd. W4BFB/WR4AEU(94)

Charlotte

Charlotte RC 1st Thur. 1900 Club Bldg.-WSOC-TV N.Tryon St. W4CQ/WR4ALO(06)

Charlotte

Friday Lunch Group Fri. 1200 - Mediterranean Rest. on Independence Blvd.

Durham

Durham FM Assn. 2nd Tue. 1800- K&W Cafeteria at University Mall in Chapel Hill
WR4AGC (82)

Fayetteville

Cape Fear ARS 3rd Mon. 1900- Methodist College, WR4ANN (91)

Greensboro

Greensboro RC Fri. 1930- Club House near Friendship Airport W4GG

Greensboro

Piedmont ARS 3rd Fri. 1830- Bonanza Sirloin Pit Rest., High Point Rd.

Greensboro

Ladies in Amateur Radio Soc. 2&4 Thur. 1830 Shoneys on High Point Rd.

High Point

High Point ARC Tue. 1930- Old Mill Rd. WR4AFV (79) & WR4ADT (00)

Jacksonville

Onslow ARC 2nd Sat. 1000- Howard Johnsons Restaurant WR4AJG (00)

Laurinburg

Scotland Co. ARS 1st Wed - Cablevision Office, WR4AOX (67)

Lexington

Healing Springs Mtn. VHF Soc. Last Mon. 1930- Burlington House Furniture Co.
Personnel Office W4PAR/WR4ABX (91)

Lumberton

Lumberton ARC, 3rd Thu. Robeson Co. Public Library at 1930

Raleigh

Raleigh ARS 1st Wed. 1930- CD Rm NC State Admin. Bldg W4DW/WR4ACF (64)

Salisbury

Rowan ARS 2&4th Mon. 2000-Salisbury City Hall, Main St. W4EXU/WR4AAA(73)

Shelby

Shelby Radio Club 2nd Mon. 1830 Hungry Bull Rest., Dutch Supper

Winston-Salem

Forsyth ARS 2nd Fri. 1930 Naval Reserve Training Center

Wilmington

Wilmington VHF Assn., 2nd Tue. of Jan., Mar., May., Jul., Sept., & Nov., at Carolina
Savings & Loan, College Rd. Social Meeting in other months at location announced.
WR4AHL(82)

CLUB MEETING CALENDAR (cont.)

South Carolina

Anderson

Anderson RC 4th Thu. 1930- Anderson County Library WR4AIO (97)

Charleston

Holiday VHF Soc. 2nd Wed 1930 - Pinehaven Shopping Center Mtg Rm, WR4AFX (94)

Charleston

Trident ARC 1930 3rd Thur. Park Circle Presb. Church

Columbia

Carolina Rpt. Soc. 1st Mon 1930 Providence Presb. Church WR4ACD (94)

Florence

Florence FM Rpt. Assn. 3rd Mon. 1930- Florence Darlington Tech Ctr.

Greer

Greer ARC 1st Mon 1930 Mtg. Location announced monthly, WR4ABG (94)

Greenville

Blue Ridge ARS 1st Tue. 1930 Red Cross Bldg. 3rd Tue dinner.

Greenville

The Dutch Lunch Club Mon. S&S Cafeteria at 1245.

Greenwood

Piedmont Tec ARC, 1st Mon 1930 at Piedmont Tec, WR4AUE (15)

Keeowee

Keeowee - Toxaway ARC, 3rd Tue. at Keeowee Toxaway Visitors Center.

Orangeburg

Orangeburg ARC 1st Thu. 1930 at Tennelec on Hwy 301 North, WR4AQY (09)

Sumter

Sumter Rptr. Assn 3rd Mon 2000 City/County Office Bldg Conf Rm WR4AOI (64)

Walterboro

Costal Amateur Radio Assn 2nd Sat. 1900, mtg announced on 31/91 net.

Virginia

Charlottesville

Univ. of Virginia ARC every other Thu. 1930 Thornton Hall, W4UVA

Charlottesville

Albemarle ARC 2nd Wed. 1930 at City Courthouse on 4th St. NE. WA4TFZ

Lynchburg

Lynchburg ARC 2nd Fri. 2000 at Beulah Bapt. Church, Leesville Rd., K4HEX

Newport News

SPARC 1 & 3rd Wed. 1930 at Vepco Bldg in Hampton, WR4ALW (73)

Norfolk

Hampton Roads Radio Assn. meeting time announced, WR4ACN (79)

Richmond

Richmonds Amateur Telecommunications Soc (RATS) 1 & 3rd Fri. 1930 at the stone house in Forrest Hill Park, WR4ACW (88)

Virginia Beach

Virginia Bch. ARC 1st Tue. 1930 at Plaza Fire Station, WR4AAC (97)

Winchester

Shenandoah Valley ARC 1st/3rd Fri. 2000 Club bldg. on Grace St. WR4AGT (82)

A Need For Tighter Coordination Policies?

The CVRA, in my opinion, has done a good job of maintaining reasonable separation of 2 meter machines and frequencies in most cases. There have been a few "elevation" and "trough" problems but in general, things have gone quite well.

The situation from here on out begins to look a bit grim in terms of new repeaters on 2 meters in North Carolina - and, eventually, in South Carolina and Virginia. All pairs that remain are the "splits" or Tertiary frequencies and they are very few and just too close for comfort to the adjacent machines.

Some of our sister organizations have been doing just a bit more than we to tighten up some of the coordinating procedures. They are coordinating for wide area, general area and local coverage machines. While all machines are expected to "grow", the growth should be restricted generally to functions such as autopatch as opposed to increased coverage. Many of the association's problems have stemmed from the fact that two fine local repeaters on the same frequency separated by many miles suddenly increased their coverage area. Hams who could not previously get into

either one are now getting into both. So the user problem begins.

One of the obvious answers is to, at the time of coordination, define the coverage area for that repeater and insist that local machines remain local. One fact is certain - there is clearly not enough geography to allow all machines to develop into wide area machines.

We would like to try a little experiment and solicit your views on this subject. Please drop a note to our editor, K4GHR, and be sure to indicate whether you are a full member (repeater representative) or an associate member. This information could be most valuable in determining possible future changes in our coordination policies. Your response will be dealt with at our next meeting on Labor Day week-end.

Take the time to send your ideas. It could help us all.

73,
Ed Alderman, WA4PEN
President

MORE CHANGES TO THE REPEATER JOURNAL Bill Parris, K4GHR, Editor

As you can see, we are still making changes in the format and printing style in the "Journal". I hope you will bear with us until we get it all sorted out. . . I do believe you will agree it is all for the better.

It is a pleasure to announce that Buster Brafford, WB4ZIN, has assumed the job as PUBLISHER of the "Journal". Buster operates his own printing firm in Burlington and is donating much of his time in improving the layout of our magazine. Buster's responsibilities will include the physical layout of the material and the printing. This will relieve much of the Editor's time now spent in preparing all of the material for printing. Welcome to the Staff Buster. . . . we look forward to a long and successful future.

AMSAT — PHASE III

AMSAT — Phase III is a revolutionary new series of amateur radio communications satellites designed for long lifetime operation in high altitude synchronous, circular or elliptical orbits. Phase I of the amateur satellite program was represented by OSCAR's 1 through 5. These were short lifetime satellites which served to familiarize radio amateurs with satellite tracking techniques. The AMSAT — OSCAR — B series (Phase II) included AMSAT — OSCAR 6 and 7, still in operation. They marked the development, for the first time, of long life satellites for two-way amateur radio communications and experimentation. Phase II spacecraft have been designed for fairly low orbital altitudes, below 1,000 miles. These satellites have been used by amateurs in over 100 countries to make hundreds of thousands of contacts. Communication distances have been limited, because of the low altitude, to 5,000 miles and to communications periods of 25 minutes at a time.

The new Phase III spacecraft, now being developed, will provide radio amateurs with a spectacular new communications resource. In the area of public service, Phase III satellites will permit:

- ♦ Dramatically expanded emergency communications capabilities, of vital importance for disaster relief operations.
- ♦ Transmission of educational material directly to school rooms, using simple receiving terminals.
- ♦ New means of low cost experimentation in satellite techniques, available to all countries alike. there would be no user charges.

To the Radio Amateur, Phase III will provide:

- ♦ New Amateur Bands comparable to the 20 meter band, yet far more reliable and predictable for two way communications.
- ♦ A means of communicating over transcontinental distances for many hours at a time using relatively low power amateur terminals and small antennas.
- ♦ A highly effective means for transmitting amateur bulletins and training material throughout entire continents.
- ♦ Far more efficient use of the VHF and UHF amateur bands, particularly for long distance communications.

The Phase III spacecraft will exceed all previous OSCAR's *combined* in operational capability and technical sophistication. Two 50-watt satellite transponders are under development, a 145.9 MHz input, 435 MHz output unit and a 435 MHz input, 145.9 MHz output system. Both transponders will operate in a linear, multiple-access mode

(cont. next page)

AMSAT - PHASE III (cont.)

to serve hundreds of users *simultaneously*. Users will be able to access these satellites with simple, off-the-shelf equipment. The spacecraft's effective radiated power is expected to be 500-1,000 watts, achieved in part through use of directive antennas on the satellite. Compare this to OSCAR 6 which develops less than two watts and OSCAR 7, with less than 10 watts.

An onboard microcomputer is expected to greatly enhance the operational flexibility of AMSAT - Phase III. The computer will control housekeeping functions, experiment scheduling, telemetry and telecommand data-handling.

AMSAT - Phase III -- a significant new step forward for the world's growing population of radio amateurs, offering a new resource for communications and public service.

RECENT NEWS FROM HR REPORT*

In the ARRL's Forum at the Dayton Hamfest league President Harry Dannals, W2HD, reviewed the status of current FCC activities and the ARRL's position toward them. He also reported the League will be considering a full time Washington representative at its July Board Meeting.

Israel Treger of Trigger Electronics was arrested in early May after the Judge in his fraud case received information that Treger was apparently considering leaving the country. The arrest was made on a Writ of No Exeat, requiring Treger to post a \$ 25,000 bond that he would not leave Illinois.

FCC Amateur Dialogue has been severely curtailed as a result of a court decision handed down in Washington a few weeks ago. In its ruling in the case of "Home box office vs. the FCC" the US Court of Appeals of the District of Columbia stated:

" Once a Notice of Proposed Rule Making has been issued. . . any agency official or employee who is or may reasonably be expected to be involved in the decisional process of the rule-making proceeding, should refuse to discuss matters relative to the disposal of the rule-making proceeding with any interested private party or any attorney or agent for any such party prior to the agency's decision".

This prohibition is being interpreted to extend to 60 days after the final Report and Order on an NPRM becomes effective, to include the period in which a Petition for Reconsideration may be filed. In the Amateur service this could be years - Restructuring, for example, is still open, so you can't discuss code-free licenses, etc.

An appeal of the decision by the FCC is considered likely. In the meantime, expect to find yourself gagged in much of your contact with the Commission.

— tnx. Ham Radio Magazine, Greenville, N.H.

MANASSAS HAMFEST

Sunday, June 5, 1977

PRINCE WILLIAM COUNTY FAIRGROUNDS

½ Mile South of Manassas, Virginia, on Route 234

FANTASTIC PRIZES AGAIN THIS YEAR!

1st PRIZE — H. F. SSB TRANSCEIVER (TS-520 or equivalent)

2nd PRIZE — 200+ MHZ FREQUENCY COUNTER

3rd PRIZE — BIRD MODEL 43 WATTMETER WITH ELEMENT

— Plus many, many more prizes —

GENERAL ADMISSION

\$3.00 per person at gate. No advanced sales.

Children under age 12 admitted free.

Gates open at 8:00 A.M.

TAILGATING

\$2.00 per vehicle in addition to general admission.

Ample room - 300+ spaces available. Cover available in case of rain.

Gates open at 7:00 A.M. for set-up.

REFRESHMENTS

Hamburgers, sandwiches, hot dogs, soft drinks, coffee, etc., available at reasonable prices until 2:30.

Hotcakes and eggs-to-order from 7:30 to 10:00 A.M.

SPECIAL ACTIVITIES

YL program - Films and demonstrations.

Childrens entertainment.

FM Clinic - Spectrum analysis, deviation and power checks.

CW Proficiency awards - 5 wpm up. Test your CW skill.

QSL Bureaus - learn how they work; submit your SASE's for DX QSL's.

FACILITIES

Indoor exhibit spaces available for dealers and manufacturers.

Mail requests for information to:

Ole Virginia Hams ARC, Attn: Frank Atkinson K4CB
P.O. Box 1255, Manassas, Virginia 22110

TALK-IN

146.37/146.97 and 147.84/147.24 repeaters.

146.52 simplex and CB channel 1.

ACCOMODATIONS

Holiday Inn and Ramada Inn at I-66 and Rt. 234 Interchange.

Camping at Prince William County Fairgrounds(hamfest site).

Presented by the OLE VIRGINIA HAMS A.R.C., INC.

Refreshments by WOODBRIDGE WIRELESS, INC.

MORE NEW REPEATER GROUPS JOIN CVRA

SOUTH HILL, VA.....WR4APF, 147.84/147.24, owned and operated by Carter Cogle, K4ARO, joined CVRA in January. The machine provides good mobile coverage in the Virginia counties of Charlotte, Lynchburg, Brunswick, Mecklenburg, and Nottoway, and the North Carolina counties of Warren, Vance, and Western Halifax. The Transmitter is a VHF Engineering unit and the Receiver is GE. The antenna system includes a DB Products Duplexer and a 6db omni antenna at 120 ft., with a HAAT of 200 ft. The machine is located on Highway 47 near the western edge of the town limits. The repeater is open and available for all to use. ID is via CW and control is both automatic and local. Representatives to CVRA are Carter Cogle, K4ARO, and Joe Talley.

CHARLOTTESVILLE, VA. The Albemarle Amateur Radio Club is the owner of WR4ATL, 146.16/146.76, which is replacing the former machine which was on 28/88. The Motorola Sensicon A receiver and GE Prog Line transmitter feed an antenna system consisting of two half waves in phase and is located on Carter's Mountain, three miles SE of Charlottesville. The antenna is at 1500 ft. above mean sea level and 1044 ft. HAAT. Good coverage is provided to the counties of Albemarle, Greene, and Fluvanna. This is an open machine with CW ID. Control is via 220 link. Representatives to CVRA are Jon DiMarco, WB4NVR and Ronald Richey, K4RKA.

PETTERSBURG, VA.....WR4ATB, 147.90/147.30, owned and operated by Kenneth Biggs, WB4YHQ, is now on the air and testing. The Motorola equipment is duplexed to a Hustler 66-144A with an HAAT of 130 ft. The repeater site is on a city water tower. This is an open machine and is under local control. WB4YHQ is the CVRA Representative for this machine.

LAURENS, SC WR4AZM, 146.25/146.85, owned and operated by the Carolina Computer and Radio Assn., is now on the air and giving good service to Laurens, Greenwood, Spartanburg, Union, Newberry, Greenville, and Anderson counties. The Motorola repeater feeds a Shakespere 5.25 db antenna which is located on a water tank at the Deering-Milliken Plant with a HAAT of 200 ft. This is an open machine and is equipped with a CW ID. Control is via phone line and 450 mhz. Representatives to the CVRA are Eddie Braswell, WA4UZA, and Boyd Miner, K4KEP.

CLEMSON, SC The Keowee-Toxaway ARC has a repeater under construction which will operate on 147.87/147.27, from a site 10 miles north of Walhalla, SC, in Sumter National Forest. The antenna will be located at 2180' MSL. The equipment will be a GE MASTR II feeding a homebrew duplexer and a stationmaster antenna. This will be an open machine and will be controlled via a UHF link. An autopatch is planned. It is expected that the machine will be operational by August 1977. Representatives to the CVRA are Jerry Kelley, WA4JRJ, and Brace Douberley, WB4JNE.

More Repeater Groups Join CVRA (cont.)

COLUMBIA, SC Fred Atkinson, WB4AEJ, has a repeater planned for the Columbia/Irmo area and has requested 146.07/146.67 for its frequency. No further details of the machine or its site are available at this time. Representatives to the CVRA are WB4AEJ and Lynn Childress, K4BHE.

LOCUST, NC WR4BBA, owned and operated by Dexter McIntyre, WA4ZIA, and Billy Crouse, WB4CHW, has begun operations on 222.40/224.00 from its temporary site at the QTH of WA4ZIA. The repeater will be moved to its permanent location atop a nearby fire tower in the near future. The machine consists of a VHF Engineering repeater and two 5/8 wave homebrew antennas. HAAT at the permanent site will be 232'. Coverage area has not yet been established. An autopatch is planned. Representatives to the CVRA are WA4ZIA and WB4CHW.

EDEN, NC. WR4AZX, owned and operated by Tom James, WB4TCZ, has begun experimental operations on 147.84/147.24 from the QTH of WA4ACP/WB4CTZ, which is approximately 1/2 mile from the new Miller Brewery. Good coverage is being provided for Rockingham County and much of Henry County (Va.) Equipment consists of a RCA Fleetline transmitter and receiver. Representatives to the CVRA are WB4CTZ and Kerry James, WA4ACP.

COLFAX, NC WR4BBJ, 223.28/224.88, has begun temporary operation from the QTH of its owner, Wayne Williams, K4MOB. The machine consists of a converted Clegg FM 76 which will be duplexed to a Cushcraft 4 pole array at 100'. Good mobile coverage is expected for Guilford and Forsyth Counties when the machine is finally completed. K4MOB represents the repeater in the CVRA.

CARY, NC A split site six (6) meter machine has begun operation on an experimental basis from the QTH's of its owners, Walt and Stan Brothers, WB4MPD and WA4NRR. Input is on 52.35 mhz and output on 53.35 with a link on 449.68 mhz. The receiving antenna is at 60' and transmitting antenna at 40'. Equipment is GE Prog line and antennas are Ringos. Control is via telephone. The license application has been filed and regular service will begin after the license has arrived. Coverage presently consists of Durham, Orange and Wake Counties. Representatives to the CVRA are WA4NRR and WB4MPD.

WINSTON-SALEM, NC....The Fiddlers Creek Radio Club has begun experimental operation on 147.915/147.315 from a temporary site in Advance, NC. The equipment consists of a VHF Engineering transmitter and a Simpson receiver. The machine will be moved to its permanent site at Tallys Crossing in Forsyth County early in the summer. Good mobile coverage is expected in Forsyth, Stokes, Surry, Guilford, Randolph, Davidson, Davie, Rowan and Yadkin Counties. HAAT of the antenna will be 180' and control will be via telephone line. Representatives to the CVRA is K4QDM, Ray Stewart, who is also the Trustee.

(cont. page 33)

DURHAM FM ASSOCIATION

Promoting VHF & UHF FM
with Repeater WR4AGC

146.22 - 146.82 52.15 - 53.15
449.10 - 444.10 222.34 - 223.94

DFMA Meetings 2nd. Tuesday 6 P.M.
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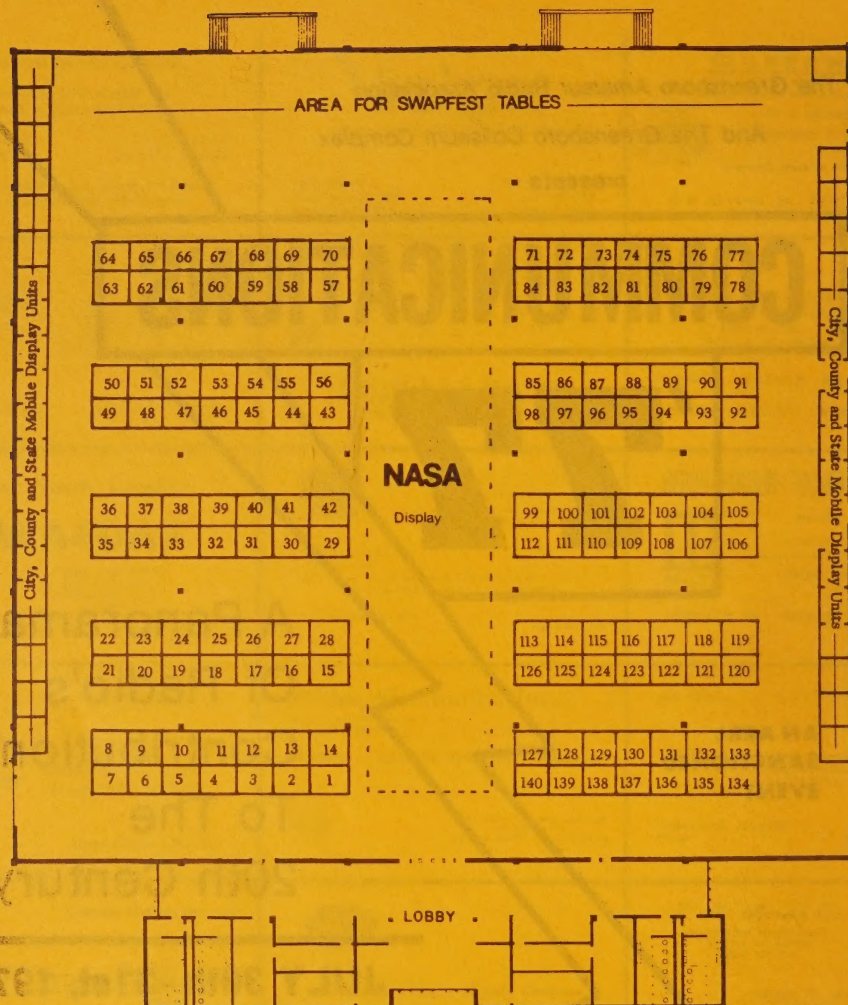
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Durham FM Association to CHANGE FREQUENCY of WR4AGC

The Durham FM Association, operator of WR4AGC 22-82, recently voted to change the frequency of the repeater to 147.825-147.225 mhz. The change is being made to eliminate the problem of overlapping input coverage with the Roaring Gap and Wilmington repeaters. By changing to a clearer frequency, the wide coverage capabilities of the repeater, located near Hillsborough, can be fully utilized.

The DFMA will install a local coverage repeater on 22-82 near downtown Durham to provide reliable walkie-talkie coverage and to maintain 22-82 for transient mobiles traveling on I-85 and other area highways. Coverage will favor I-85 north toward Kerr Lake and Henderson.

The association members feel that a change by WR4AGC will benefit both Roaring Gap and Wilmington users. It is hoped that those wishing to continue to enjoy the "Always Good Coverage" will "crystal up" or "synthesize up" to 825-225. The changes will be effective around July 4.

Two Meter Frequency Situation in CVRA Territory (cont.)

1. 15 khz. channels will be "right-side-up". That is, low in-high out in 146 and in-low out in 147 MHz.
2. Coordination will be done to offer maximum geographic separation between repeaters on both adjacent channels. Fifty mile minimum separation of adjacent channel repeaters will be the objective. (The objective in the Washington area is 35 miles minimum.)
3. All repeaters in CVRA territory must limit transmitter deviation to ± 5 khz. or less. With repeaters separated by 15 khz., we are in narrow band environment. There is no place for a wide band repeater in today's technology.
4. All repeater transmitters should be kept within ± 1 khz. of their recommended operating frequency.
5. Repeater receivers should be narrow-band to avoid being keyed by stations using adjacent channel repeaters.
6. All repeater users must limit transmitter deviation to ± 5 khz. or less. Receivers should be narrow band to minimize interference received from adjacent channel repeaters. Transmitters should be kept within ± 1 khz. of the input of the repeater being keyed.
7. Repeater not meeting No. 3 - 5 will be requested to do so by CVRA.
8. All repeater users are asked to follow No. 6 for the benefit of fellow amateurs.
9. 15 khz. channels will be considered regular channels just as the previous 30 khz. spaced channels.
10. In areas already served by several two meter repeaters, individuals or groups desiring to put another repeater on the air will be encouraged to utilize 220, 450, or 50 MHz. bands before putting on another 2 meter repeater.

Frequency Situation in CVRA Territory (cont.)

The 15 khz. channels are listed below showing their relation to the 30 khz. channels.

146 mhz.		147 mhz.	
30 khz.	15 khz.	30 khz.	15 khz.
01-61	—	69-09	—
—	025-625	—	705-105
04-64	—	72-12	—
—	055-655	—	735-135
07-67	—	75-15	—
—	085-685	—	765-165
10-70	—	78-18	—
—	115-715	—	795-195
13-73	—	81-21	—
—	145-745	—	825-225
16-76	—	84-24	—
—	175-775	—	855-255
19-79	—	87-27	—
—	205-805	—	885-285
22-82	—	90-30	—
—	235-835	—	915-315
25-85	—	93-33	—
—	265-865	—	945-345
28-88	—	96-36	—
—	295-895	—	975-375
31-91	—	99-39	—
—	325-925	—	—
34-94	—	—	—
—	355-955	—	—
37-97	—	—	—
—	385-985	—	—
40-00	—	—	—
—	415-015	—	—
43-03	—	—	—
—	445-045	—	—
46-06	—	—	—
—	475-075	—	—

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SOUTH CAROLINA

Greenville The Blue Ridge ARS's 01/61 machine, WR4ADG, now has a Super Stationmaster antenna and duplexer installed on the TV - 4 tower and the coverage is better than ever. The Society's 22/82 Autopatch repeater, WR4AHJ, has excellent coverage from it's new location on top of Parris Mountain.

Greenville The Monday Dutch Lunch Group is growing. Between 12 and 25 Hams from the area meet at 12:45 at the S&S Cafeteria for an hour of social eye-balling. All hams near Greenville on Monday are invited to meet with the group.

Greer The Greer Radio Club now has button No. 7 on the Touchtone Pad as access on the 34/94, WR4ABG, machine. It also has low - high frequency indicator for incoming signals.

Laurens The Laurens Club's machine on 25/85, WR4AZM, is now operating and has good coverage in that area.

Greenwood WR4AUE, 147.75/147.15 now has a duplexer and Super Stationmaster antenna installed and is getting excellent mobile coverage.

Charleston The Trident Amateur Radio Club hopes to have their new 147.87-147.27 machine in operation by June with the antenna located on top of a water tower at Goose Creek, SC.

Charleston The Holiday VHF Society 16/76 machine, WR4ASP, located aboard the carrier Yorktown, now has autopatch. The Society's 34/94 repeater, WR4AFX, located atop the Holiday Inn continues to give good coverage.

White Hall WR4AQL, 31/91, now has a full standby machine available. The Coastal ARA continues to hold its 2 meter net each Thrusday night at 9:00 PM on the repeater.

Greenwood The Piedmont TEC ARC, operator of WR4AUE, 75/15, meets the 1st monday of each month, and has a two meter net that meets each Tuesday evening. See the Net Register and Club Meeting Calendar for details on these and other meetings and nets.

Sumter The Sumter Area Amateur Radio Repeater Association, operator of WR4AOI, 04/64, now is equipped with a new VHF Engineering transmitter, put together by the new Trustee, WB4THE. New Officers of the Association are President, WA4CMM; Vice President, WA4VBV; Secretary, WA4RKV.
(Editor's Note: Why didn't Sumter renew their membership in CVRA this Year, Pee Wee?)

Sumter Another repeater is in the offing for the Sumter area with 147.66/147.06 being coodinated for WA4LSM.

Myrtle Beach Going to the Grand Strand Area this summer? If so, be sure to listen on 146.01/146.61, WR4AXC, which is providing good mobile coverage from its 450 ft. HAAT location from atop a CATV tower in Conway. The machine is sponsored by the Grand Strand ARC.

VIRGINIA

Danville WR4AHG repeater, formerly operating on 10/70 has changed its frequency to 147.945/147.345. Glenn, K4YZR, reports the machine is doing well on the new frequency.

Danville A new 10/70 repeater, to be located on White Oak Mountain, 20 miles north of Danville, is due on the air at any time. The new 120 ft. tower is complete, with a Super Stationmaster on top fed by hardline. Permanent housing for the machine was installed in mid- April and testing was expected as soon as power was turned on in late April. The new machine should have extensive coverage in Southern Virginia and Northern North Carolina. The repeater will be using the temporary call of WR4BBJ.

Chesapeake The Hampton Roads Radio Association, Owners of WR4ACN, 19/79, reminds user of their autopatch (and it goes for all of us), the logging tape recorder begins after the autopatch is accessed and you hear a dial tone and ends when you disconnect. Therefore, you must give your call, the call of the repeater, the date and time after you access. (after you press the “*”) After completing your conversation, give the name of the party to whom you were talking. This must be done before you press the disconnect “#”. Giving the phone number which you are calling serves no useful purpose.

Chseapeake HAMFEST '77 plans are shaping up good as the Tidewater Radio Conventions group gets ready for its Hamfest and Convention to be held at the SCOPE in Norfolk on July 9 -10.

Lynchburg Jack Warren, WB4MDC, has been appointed Emergency Coodinator, EC, for the Lynchburg area, with George Rose, W4GCE, as Adminstrative Assistant. Other EC Assistants are:

NAME	CALL	ASSIGNMENT
Ken Bay	W4UQ	HF – CW
Bob Martin	K4LKQ	Operations
Lyn White	K4AAB	Operations
PeteLascell	W4WWQ	Army MARS Liasón
Paul Lilly	K4STE	Medical Services Liason

(tnx LARC Bulletin)

Roanoke – Galax WR4AHR, 69/09 in Galax, and WR4AFE, 28/88 in Roanoke continue to be linked together. The linking of these two machines has increased the number of stations using the machines significantly.

Roanoke The Roanoke Valley ARC, operator of WR4AFY, has recently moved its frequency to 146.385/146.985, from its long standing 38/98 configuration. WR4AFY continues to give excellent coverage to the Roanoke Valley and surrounding area.

ARRL VHF CONTEST IN JUNE

The 1977 June VHF QSO Party, sponsored by the ARRL, will be held the weekend of June 11 and 12. Everyone is invited to get on any and all of the VHF bands and activate the Carolinas and Virginia.

Traditionally, most VHF activity in the ARRL contests come from the New England and upper Mid West areas of the country. Very few entrees are submitted from this section of the country. Let's turn the tide this time and let everyone see how much activity we have "down here".

Simplex contacts are the only ones that count. Get on 6 meters (AM, CW, SSB), 2 meters, 220 mhz. and 450 mhz. You will find activity everywhere. This year contacts made on 146.52 will not be counted. Simplex on 2 meter FM should be made on one of the other recognized simplex channels such as 146.49, .55, .58, 147.42, .45, .48, .51, .54, or .57. SSB and CW contacts should be made in the lower end of 145 and 144. Just listen around that weekend and you will be surprised what you will hear. More details are available in the May issue of QST, page 99.

The Mecklenburg ARS, operator of W4BFB, has placed in the nations top ten for the past two years in every VHF contest. They plan to be active in June also . . . turn your antennas toward the Blue Ridge Parkway and listen for "BFB" on 146.49, and 146.55. . . and on 50, 220, and 450 too!!!!!! A picture of "BFB" on Roan Mountain is in the May QST.

INCOMING AUTOPATCH (QST, March 1977)

We continue to get calls and letters asking us about the rules on reverse autopatch, or whatever anyone wants to call it. Reverse autopatch simply means that anyone,

licensed or not, can pick up a telephone and call a number that in some manner, turns on a repeater and permits the caller to go on the air.

Some time ago, the FCC made an interpretation for such operation and how it can be done. Their interpretation permits *one* method only, with *no* variations. A licensed control operator must answer the incoming call and screen it. Then *he turns on the repeater*. There are no exceptions to this method permitted.

ARRL NEWSLINE

As part of the ARRL's expanding Public Relations program for Amateur Radio, the ARRL Newsline has been established—203-667-0138. Whenever and Amateur is involved in a newsworthy event in which Amateur Radio plays a key role, he is urged to phone the the above machine number, and relate the details. Headquarters will take it from there and spread the word as appropriate. See April QST for more details.

Enjoy this issue of the "Journal"? . . .
.. Write the Editor and let him know.

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ANNUAL MEETING OF THE ENC REPEATER

The sixth annual meeting of the membership of ENC Repeater, Inc. was held on Sunday, March 20, 1977 at the Quality Inn Restaurant, Goldsboro, N. C. beginning at 1:00 pm. There were 24 members and 21 non-member guests present.

President Bob O'Bryan, W4YMI, presided and called the meeting to order with a word of welcome. Minutes of the previous annual meeting of membership having been mailed to all members were approved as mailed.

Two amateurs were voted into membership: Danny R. LoCicero, WA4WIV, New Bern and Dr. James H. Peoples, W4GPZ, Kinston. A report on membership indicated we have 79 members plus 9 associate members on the rolls.

Present Bob O'Bryan expressed the thanks of the whole membership to all those who assisted in making our 1976 repeater operations so successful with special recognition to Jim Evans and his group of technicians and elevator riders as well as to the emergency net coordinators and others.

Curt Powell, WB4WAA outlined the history of ENC repeater, Inc. from its early beginnings and tracing events up to the present. Jim Evans, K4PRJ, described some of the recent maintenance activity and had several

of the back-up units on display. Plans were described for a Saturday gathering at the repeater site for June 4 during which time there would be a opportunity for several trips up the tower. Maintenance on the repeater box hinges and some minor antenna adjustments are contemplated. The Rally will probably involve a Bring-your-own Lunch or sending in to Grifton for hamburgers at mid-day.

Eddie Sellers, W4NTQ, N.C. Vice Director for the Carolinas Virginia Repeater Association reported on recent changes in that organization's Board and Bill Finch, W4EHF, State Emergency Coordinator, Fayetteville, also addressed the group.

Following nominations from the floor, six directors were elected. These directors then retired to elect officers for the coming year. The officers and directors for the next 12 months are: President- Dr. C. Chris Bremer, WB4AHJ; Vice President- Jack Edwards, W4DXJ; Secretary- Treasurer- William S. Page, WB4LWX; Directors: Calvin M. Dempsey, WA4UQC; James B. Evans, K4PRJ; Ronald H. Myers, WA4MBR; James C. Peacock, W4LWU; Oliver "Curt" Powell, WB4WAA and David B. Taylor, WA4PHO. Past president is Robert C. O'Bryan, W4YMI, an ex-officio member of the board.

The US Amateur Population passed 300,000 for the first time during March, with 300,372 licensed US Amateurs at the month's end. The total at the beginning of the month was 296,967, and 6693 new licensees during March, more than doubled the 3288 who let their licenses expire during the month. A year ago we numbered on 265,528, so we increased almost 35,000 in one year.

In the Denver area, Amateurs became suspicious of some of the people showing up on the amateur bands. After monitoring extensively, 75 suspicious locals were turned up.

—tnx. Ham Radio Magazine, Greenville, N.H.

GREENSBORO, NC Elliott Borenstein, WB4CFK, recently placed WR4AWZ, 147.63/147.03 on the air in regular service. The machine consists of a Motorola 140 D and 2 Ringo Rangers at 150' HAAT. Good coverage extends to Guilford County. An autopatch with standard access is provided. WB4CFK represents the repeater in the CVRA.

MOYOCK, NC John Wilemon, W4YHK, has WR4BBP which will operate on 447.10/442.10, about ready to go on the air, but he is out of the country for a while and the machine will not be in regular service until the Fall. The Motorola equipment is duplexed to a single 6db collinear at 200'. The machine is located at the QTH of W4YHK.

GASTONIA, NC WR4BAD, owned by David Keever, WB4KIB, has recently been placed into service from its site atop Crowders Mountain with a HAAT of 800'. The equipment consists of a GE MASTERpro receiver and a Motorola Sensicon transmitter and operates on 146.205/146.805. This is a closed machine and requires the transmission of a continuous tone to access. WB4KIB represents the repeater in the CVRA.

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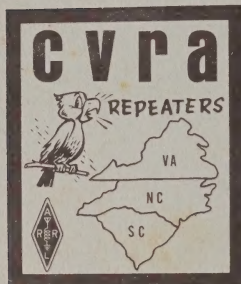
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